

# EUROPEAN PATENT OFFICE

## Patent Abstracts of Japan

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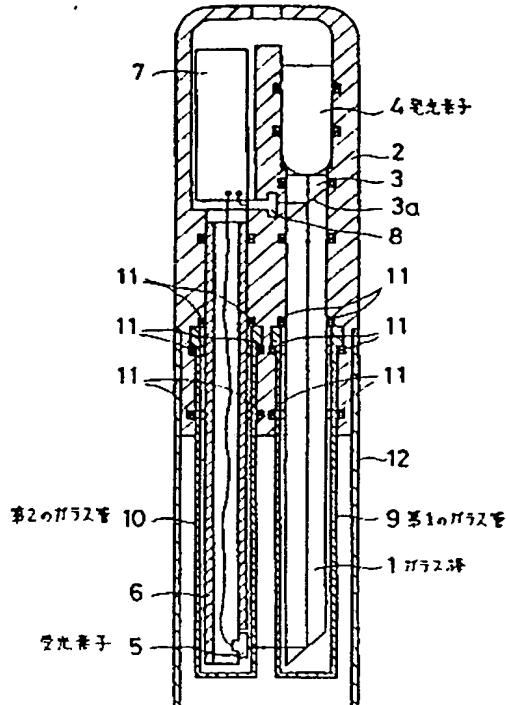
APPLICATION DATE : 27-01-87  
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TITLE : APPARATUS FOR DETECTING POLLUTION OF LIQUID



**ABSTRACT :** PURPOSE: To enhance accuracy and safety, by covering a light receiving element receiving the light through a liquid layer being an object to be detected with a glass tube and directly inserting the glass tube in the liquid to detect a pollution degree.

CONSTITUTION: The first and second glass tubes 9, 10 are inserted in oil being an object to be detected along with a light blocking case 12. The light transmitting through a half mirror 3a in the light from a light emitting element 4 passes through a glass rod 1 and reflected by the leading end surface of said glass rod 1 to be incident to a light receiving element 5 through the oil layer between the tubes 9, 10. Therefore, the quantity of the light reaching the element 5 corresponds to the pollution degree of the oil layer. The reflected light by the half mirror 3a is supplied to a photodiode (PD) 8 to detect the quantity of the emitting light of the light emitting element 4. The output of PD 8 is compared with reference voltage and, by controlling the quantity of the emitting light from the element 4 by the voltage corresponding to the difference between both of them, the quantity of the emitting light is always kept constant even when the element 4 generates heat and accurate measurement becomes possible. Since the rod 1 and the element 5 are inserted in the tubes 9, 10 to detect the pollution degree, safety is held even when an object heated to high temp. is detected.

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